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Collaboration, JTE, and LVC Interoperability

USJFCOM and PEO STRI are collaborating in the JTE. Chuck Weirauch discusses the issues with Greg Knapp, Executive Director of the USJFCOM's Joint Training Directorate and Joint Warfighting Center.

In June of this year, the US Joint Forces Command (USJFCOM) and the Army's Program Executive Office for Simulation, Training and Instrumentation (PEO STRI) signed a Memorandum of Agreement (MOA) to work together to support all of the US services in their joint training efforts. A major area of collaboration is in the continued development of an interoperable and fully integrated live, virtual and constructive (LVC) training environment. Critical to the success of this environment are common and interoperable training aids and simulations. PEO STRI is responsible for the development and procurement of these training systems.

"PEO STRI has been directed to advance the Department of Defense's efforts to create interoperable live, virtual and constructive solutions to enhance training and testing capabilities," said Dr. Jim Blake, program executive officer for PEO STRI. "In doing so, we will serve as the center of acquisition excellence to

support our Warfighters with simulation and training devices."

"The recent signing of the JFCOM MOA we believe will truly set the conditions to facilitate the PEO's ability, in a more formal and structured way, to address the LVC requirements facing both Army and our sister services," said Joe Giunta, PEO STRI LVC Strategic Integrator.

The PEO is currently developing its LVC Integrated Training Environment (ITE): a prototype is scheduled to be operation in FY 2010 at Fort Bliss, Texas. Critical ITE elements are the Army's Synthetic Environment (SE) Core and One Semi-Automated Forces (One SAF) common database elements, Giunta explained. The USJFCOM is continuing development of the Joint Training Environment (JTE) that is incorporated into the Joint National Training Capability (JNTC).

Exploring the issues, *MS&T's* Chuck Weirauch spoke with Greg Knapp, Executive Director of the USJFCOM's Joint

Training Directorate and Joint Warfighting Center.

MS&T: What is the significance of the USJFCOM Memorandum of Agreement with the Army's PEO STRI. How does it help LVC interoperability for joint and coalition forces?

GK: What it does is allow us to gain their strengths, which is how do you acquire and establish capabilities, and combine them with ours, which is how do you apply those capabilities to training. From the service perspective, that has always been a natural relationship. But for the joint community, there hasn't been a structural relationship that allows that kind of cooperation to move forward. So we think that the MOA is about strengths and the ability to connect the Warfighter requirements to what the acquisition community is doing. This will allow us to get the communication between these two dimensions and put us both in a better position to do what is needed.

MS&T: Could you give me an overview of the Joint Training Environment (JTE) and current progress towards a seamless integration of LVC assets into an integrated training environment?

GK: We refer to the Joint Training Environment as the Global Synthetic Environment. We use this term in our future planning. This is kind of where we see it. It really pulls together all of the dimensions of the modeling and simulation capability, our virtual capacity and our live assets into a multitasking dynamic environment. That's kind of where we would like to go. That environment would be persistent and available throughout all of the training community. We are moving towards that end. But there is more to be done. We need to make sure that it is also capable of working with our test and experimentation requirements.

But we also need to make this environment persistent. It isn't persistent today, where you could bring it up like you would in a game. Over the next few years, we will be moving toward that end. And there are additional things that we need to do as far as completing out the complexity of that environment. In other words, right now the environment does very good kinetic-type things, but the needs of irregular warfare are very different than what we have looked at. Now the non-kinetic dimensions of the synthetic environment are the things we are focusing on in the future.

MS&T: *What has been accomplished so far?*

GK: We now have a national network capability that links most of the major service training programs together – it's well over 40 sites now – and links the combat and command major training programs together. So today we have a fully distributed synthetic environment that can be used to join services, COCOMS or any combination therein together. What JFCOM has done is helped coordinate across departments to tie together that LVC environment to support these different programs. So today it's very common to have a Navy program to work with an Army program, or an Air Force program to work with a Special Forces program.

It's that combination of training programs, the building of training programs, that allow us to inherently get after interoperability in joint issues, which is the whole objective of this Global Synthetic Environment. We currently support a wide variety of exercises and have about 27 or 28 active programs that are using this infrastructure today. This is not something in the future. It is available today and is often very successful since the beginning of Training Transformation in 2003.

MS&T: *So with that progress in mind, how far away are we from that persistent environment, or what could be described as a plug-and-play environment?*

GK: We are there as far as systems interoperability. Right now we have made tremendous progress with the community at large with our ability to connect LVC parts together to what we call the Joint Training Toolkit. Now to say it is plug-and-play – well, that is the next generation. This is where I talk about the persistent, continuously available Global Synthetic Environment. We still have work to do to be able to bring in contextual complexity that is simply available for whatever training activity we need. There is still integration and testing required to do. What is not required is the detail and the integration of the LVC environment and the setting up of the networks. That is always available. As far as plug-and-play goes, we're still not there yet. There is still work to be done.

MS&T: *What are some of the key benefits to establishing the JTE for the Warfighter, and what current training challenges will it help resolve?*

GK: The key benefit to the Warfighter is that it helps us establish a very realistic training environment that we call Joint Context. When you can bring the different training programs together, you identify and begin to work through the issues of interoperability. So this distributed training environment really has helped us more rightly provide training interfaces between the different services and COCOMS, and be more ready when these interfaces are called up in actual operation. I think that this is a pretty significant benefit to the Warfighter. It also creates a continuously available network that we now use for every major exercise. This is fundamental for our mission rehearsal exercises.

MS&T: *How are NATO and Coalition forces training being integrated into the JTE?*

GK: We have done some initial work with NATO forces and Canada, Australia and Great Britain, with significant exercises with Australia and the UK. We are also working with NATO to tie in its Snow Leopard Program activity into the whole complex. In addition, are also using the techniques of the JTE, not the infrastructure, in supporting our Partnership for Peace programs.

MS&T: *How close is the JTE to becoming fully operational?*

GK: This is a Transformation program. When we talk about fully operational, we have to put it in context with what the requirements are, and they have changed. But what we have done is meet the new requirements that have emerged in the current situation. We still have work to do, and issues are still emerging. We are continuing to transform and evolve these strategies.

Today we have reached the critical range with critical programs and the initial paths we originally defined. We now regularly and routinely train, and that was the 2009 goal. We have met the general intent of the original Transformation in that regard. But since the inception of the program, there have been new guidelines and new requirements that have emerged, and that's what the future of this program is all about.

MS&T: *At the Training and Simulation Industry Symposium in Orlando this June, you made reference to focusing an immersive LVC training environment to achieve cognitive dominance. Could you*

provide a definition of that term and how this goal could be achieved?

GK: The idea of how you improve Warfighters' decision-making in a complex environment is a critical question for us today. Today we may have insufficient ability to fully replicate the battlefield effects and conditions that really put a ground soldier in a situation where they have to make the kind of complex decisions they make in theater today. That's kind of the issue we are wrestling with. We think that there is room for improvement in that, so what we are working towards is, how do we work with the services to set up training environments that would replicate these conditions. And then we would evaluate who makes the best decisions and under what circumstances, and determine how we use that information to improve our readiness.

This is really the issue of the day that we are working on to try to get our arms around, and really the crux of irregular warfare and improving our small unit infantry ground readiness. The more readiness you can get out of an immersive environment, the much less likely that those units will have early casualties as they deploy. The more we can get in the immersive environment, the better the decision-making and the better the readiness will be.

MS&T: *What other capabilities will the JTE have for other than live exercise training, such as distributed learning. Or is live training its only focus for the future?*

GK: That's an excellent question, and it focuses on modularity. Today you can kind of selectively mix live, or live and virtual, or LVC, to meet your specific training needs. This is our current capability level. Part of the future strategy that we see is that there will be more convergence between the Web-based online and gaming technologies in this environment. So we can see that more complex situational training for individual tasks can be done through the Web and through gaming technology.

So we are starting to talk pretty seriously about how do we move in that direction. Right now we have a fairly robust online learning capability called Joint Knowledge Online. But as we move forward in that future, I think that you will see a convergence between what we do for individual training online and the immersive environment. **ms&t**